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PHOTOGRAPHIC INTELLIGENCE REPORT

IMAGERY
ANALYSIS
DIVISION

25X



WUCHING CHEMICAL FERTILIZER PLANT

SHANG-HAI, CHINA

Declass Review by
NIMA/DOD

CIA/PIR 65105

DATE APR. 1966

GROUP 1
Excluded from automatic
downgrading and declassification

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APPROPRIATION DATE(S) STOCK MINIMUM
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WUCHING CHEMICAL FERTILIZER PLANT
SHANG-HAI, CHINA

A nitrogenous fertilizer plant is located in an industrial chemical complex in the southern outskirts of Shang-hai. This installation is situated on the west bank of the Huang-p'u River approximately five nautical miles south of Lung-hua Airfield at 31 04N - 121 28E.

The identification of major processing units and an analysis of changes within the installation since 1963 are included within this report, which is based on interpretation of overflight photography obtained between [] The following descriptions are keyed to annotations on Figure 4:

1. Gas Production Section

Gas to be used in the synthesis of ammonia is produced in five probable water gas retorts (Item a). Coke, the major raw material, is conveyed to the retorts from the coke chemicals plant, directly north of this installation. Sulphur compounds and other impurities are removed in the purification units (Item b) and hydrogen enrichment occurs in the probable contact ovens (Item c). Three gas retorts appear complete on [] photography, and construction was in progress on two additional retorts which were completed by [] The adjacent gas processing facilities in this section were also expanded during this period. No additional construction was in progress in []

2. Ammonia Production Section

Ammonia is synthesized in this section in the tall converter towers attached to the large compressor building (Item d). The compressor building and one converter were present in [] and an expansion of these facilities was in progress at that time. By [] this construction, which included an addition to the compressor building, a second converter tower, and above ground pipelines connecting the new facilities, was nearing completion. These new facilities, which may approximately double the previous ammonia producing capacity, appear to be complete by [] and no new construction was in progress.

3. Sulfuric Acid Section

Sulfuric acid is produced in the converter and tower units (Item e) from sulphur dioxide generated in the roaster building (Item f). The sulphur source is a sulfide ore, probably pyrite, which

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is stored and processed in the large conveyor served buildings (Item g). The production facilities of this section were complete and operating in [REDACTED]. Changes between this date and [REDACTED] include construction on the sulfide ore processing and storage area and on a conveyor served shipping area for the solid residue from the roasting section. Construction was continuing, on these support facilities in [REDACTED].

4. Fertilizer Section

Sulfuric acid and ammonia, produced in the adjacent sections, are used in the manufacture of ammonium sulfate fertilizer in this area. The reactor building (Item h) is connected by conveyor to the processing, packaging, and shipping building (Item i). Only very minor changes have taken place in this area between [REDACTED]. Two small tanks and one medium size tank are now located on the river bank adjacent to the conveyor, where a small building previously stood; and a small processing section, possibly for the recovery of unreacted ammonia from the nearby urea plant (Section 5) has been built near the ammonium sulfate reactor building. Both of these changes have occurred since [REDACTED].

5. Urea Section

This large new section is for the production of urea. Carbon dioxide is recovered and processed in the tower units (Item j), immediately south of the ammonia synthesis section. Ammonia and carbon dioxide are combined under controlled temperature and pressure in special corrosion resistant reactors (Item k) to form ammonium carbamate which decomposes into urea and water. The product is dried and then conveyed to the final processing, packaging, and shipping building (Item l). The entire urea section was in the early stages of construction in [REDACTED]. excellent progress had been made, with the plant approximately 75% complete. The urea section appears to be in operation on coverage [REDACTED].

6. An additional treatment pond has been built in this water treatment section between [REDACTED].

7. Administration and other support facilities for this installation are located west of the above described production facilities. During this same period of time, expansion was also continuing in this area. Several shops and administration buildings were erected.

Steam and power are supplied by the Shang-hai Thermal Power Plant, Wuching, located a short distance south of this installation.

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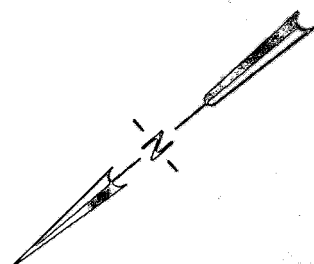
X1 The major products of Wuching Chemical Plant are ammonium sulfate and urea; produced from ammonia, carbon dioxide and sulfuric acid, all of which are manufactured at this site. The first stage development of this plant appeared to be well advanced by [] and some progress was already evident on an expansion of the gas generator facilities. By [] ammonia, sulfuric acid, and ammonium sulfate were being produced. At this date, a major addition to the ammonia synthesis section was in progress and the urea section was in the early stages of construction. By [] expansion of the ammonia synthesis section appeared to be nearing completion and significant progress had been made on the urea section. On photography from [] all production sections of the plant appear to be in operation and the major expansion of this plant, between 1963 and 1965, appears complete. Only minor units are still under construction and significant new expansion is not evident.

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FIGURE 3

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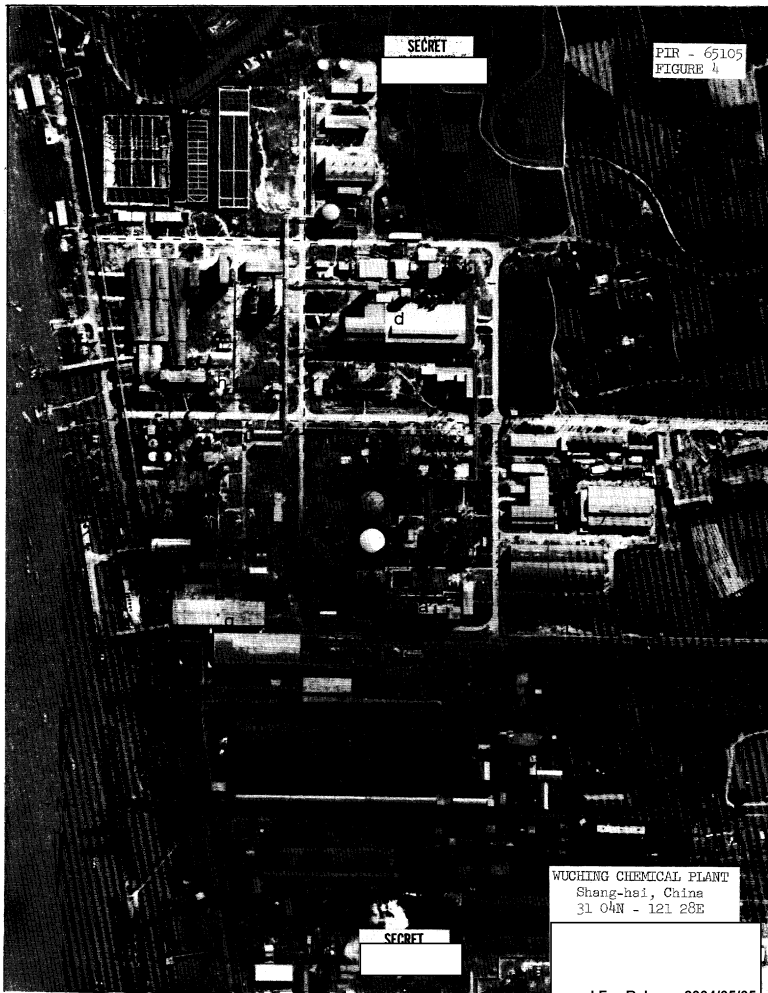
WUCHING CHEMICAL PLANT
Shang-hai, China
31 04N - 121 28E

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ITEM	DESCRIPTION
1	GAS PRODUCTION SECTION A) Probable water gas retorts B) Gas purification units C) Probable contact ovens
2	AMMONIA PRODUCTION SECTION D) Compressor building
3	SULFURIC ACID SECTION E) Converter and tower units F) Roaster building G) Ore processing buildings
4	FERTILIZER SECTION H) Ammonium sulfate reactor building I) Packaging and shipping building
5	UREA SECTION J) Carbon dioxide units K) Probable urea reactors L) Urea packaging and shipping building
6	WATER TREATMENT AREA
7	SUPPORT AREA

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REFERENCES



MAPS AND CHARTS

Locator Map, Communist China, 26906, 10-59 (UNCLASSIFIED)

ACIC, U.S. Air Target Chart, Series 200, Sheet 0492-7HL, 2nd Edition,
December 1962, Scale 1:200,000 (SECRET)

REQUIREMENT

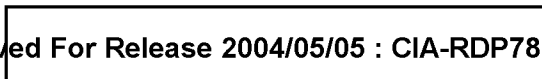
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